

**THERE IS CLAIMED:**

1. A differential group delay generator for optical signals taking the form of modulation of a carrier wave having a center wavelength, said differential group delay generator including a polarization splitter which has an input for receiving an input optical signal and is adapted to split said input signal into first and second components having orthogonal states of polarization, and an adjustable delay system for receiving said first component and including an adjustable phase modulator adapted to apply phase modulation to the carrier wave of said first component to supply an intermediate signal carried by a modified center wavelength, and a delaying dispersive component having chromatic dispersion and disposed to receive said intermediate signal and supply a delayed signal.
2. The differential group delay generator claimed in claim 1 wherein said adjustable delay system further includes a controller of said phase modulator adapted to adjust the depth of phase modulation applied to said first component as a function of a set point.
3. The differential group delay generator claimed in claim 2 wherein said input signal is an RZ binary signal with a particular bit period and said controller is adapted to send commands said phase modulator periodically with a period equal to said bit period.
4. The differential group delay generator claimed in claim 1 wherein said adjustable delay system includes a second dispersive component adapted to supply to said phase modulator a precompensated component derived from said first component, said second dispersive component having a chromatic dispersion of opposite sign to the chromatic dispersion of said delaying dispersive component and whose absolute value is not greater than that of said delaying dispersive component.
5. The differential group delay generator claimed in claim 4 wherein said second dispersive component has a chromatic dispersion whose absolute value is substantially equal to that of said delaying dispersive component.
6. The differential group delay generator claimed in claim 1 wherein said input signal is derived from a signal transmitted by an optical link, said adjustable delay system includes a second dispersive component adapted to supply to said phase modulator a compensator component derived from said first component, said second dispersive component having a chromatic dispersion such that the cumulative chromatic dispersion of said optical link and said second dispersive

component is of opposite sign to the chromatic dispersion of said delaying dispersive component, and the absolute value of said cumulative chromatic dispersion being not less than that of said delaying dispersive component.

7. The differential group delay generator claimed in claim 4 or claim 6, including a third compensating dispersive component adapted to receive said second component and having a chromatic dispersion substantially equal to the cumulative chromatic dispersion of said second dispersive component and said delaying dispersive component.
8. The differential group delay generator claimed in claim 7 wherein said second dispersive component has a chromatic dispersion such that the absolute value of said cumulative chromatic dispersion of said optical link and said second dispersive component is substantially equal to that of said delaying dispersive component.
9. A polarization dispersion compensator for optical transmission systems including a sender terminal sending data in the form of a polarized optical signal, an optical transmission link, and a receiver terminal, said polarization dispersion compensator including a polarization controller, adjustable differential group delay generator means, said controller and said adjustable differential group delay generator means being interleaved between said transmission link and said receiver terminal in that order, and control means for controlling said polarization controller and said differential group delay generator means, which differential group delay generator means conform to the differential group delay generator claimed in any of claims 1 to 6.